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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/802,734

03/18/2004

Alex A. Behfar

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7590

03/23/2005

William A. Blake  
Jones, Tullar & Cooper, P.C.  
P.O. Box 2266 Eads Station  
Arlington, VA 22202

EXAMINER

VANNUCCI, JAMES

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/802,734

Applicant(s)

BEHFAR ET AL

Examiner

Jim Vannucci

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6-15-2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Brien et al.(5,793,521).

Claim 1, the embodiment of figure 9 discloses a semiconductor laser cavity having a segment(93) and an output, and at least one etched gap(91; and col. 8, line 64) located in the segment. The embodiment of figure 1 discloses a distributed Bragg reflector for greater reflectivity(17; and col. 5, lines 19-21) at an output.

Claim 2, a total length of a laser cavity between 10 and 10,000 micrometers is disclosed(col. 10, lines 17-36).

Claim 3, given the above disclosed dimensions of the laser cavity, the etched gap would have to have a length of between 0.001 and 10 micrometers to function as disclosed(col. 8, lines 5-10).

Claim 4, the embodiment of figure 7 discloses a photonic device(75) connected to an output of a laser cavity(11) for amplification of the optical signal.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the above embodiments disclosed in O'Brien to obtain an

improved device as disclosed in O'Brien and referenced above.

3. Claims 5 and 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Brien in view of Spitzer(5,241,555).

O'Brien does not disclose the laser in the shape of a ring.

Claim 5, Spitzer discloses a ring laser(abstract) for use in a gyroscope(col. 1, lines 14-16).

Claims 7 and 10, figures 1 and 9 of O'Brien disclose a semiconductor laser cavity having at least one segment and an output, an etched gap located in the segment, a photonic device connected to the output of the laser, and an etched facet(fig. 1, no. 17) as referenced above. O'Brien does not disclose the etched facet at the Brewster angle.

Figure 9 of Spitzer discloses a facet(16) at the Brewster angle to eliminate reflections(col. 3, lines 13-16) at one end of a photonic device(78).

Claim 8, see claim 2 above.

Claim 9, see claim 3 above.

Claim 11, figure 9 of O'Brien discloses a cavity(93) that includes an entrance facet(left side) and an exit facet(right side).

Claim 12, figure 9 of O'Brien discloses an entrance facet(left side of no. 93) that is directly coupled to another photonic device(81).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the ring shape and Brewster's angle orientation disclosed in Spitzer with the laser disclosed in O'Brien improved performance and application of the device as disclosed in Spitzer.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Brien in view of Zoll et al.(5,848,090).

O'Brien does not disclose a V-shaped laser.

Claim 6, figure 2 of Zoll discloses a V-shaped laser(10) to produce a nonlinear light path(col. 2, lines 3-8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to form the laser disclosed in O'Brien in a V shape as disclosed in Zoll for improved device stability and reliability as disclosed in Zoll(abstract).

5. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Brien in view of Spitzer as applied above, and further in view of Zoll.

O'Brien and Spitzer do not disclose a V-shaped laser.

Claim 13, see claim 6 above.

Claim 14, if the laser disclosed in O'Brien and Spitzer were shaped into a V shape(Zoll), the etched facet(O'Brien) at the Brewster angle(Spitzer) would be at an end of the first leg(fig. 2, Zoll) of the V-shaped structure.

Claim 15, figure 2 of Zoll discloses first(9) and second(10) legs joined at corresponding ends to form the V-shaped structure where an exit facet(26) is positioned at the joint of the first and second legs(col. 4, lines 49-52).

It would have been obvious to one of ordinary skill in the art at the time of the invention to form the laser disclosed in O'Brien and Spitzer in a V shape as disclosed in Zoll to improve device stability and reliability as disclosed in Zoll.

***Allowable Subject Matter***

6. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter. The following limitations are primarily responsible for distinguishing this claim over the prior art.

Regarding claim 16, the limitation concerning an entrance facet at a free end of the second leg of the V-shaped structure.

Proper motivation could not be found in the prior art to combine references that disclose these limitations with the references that disclose the other limitations recited in the claims of this application.


***Correspondence***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Jim Vannucci whose phone number is (571) 272-1820.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center whose telephone number is (703) 308-0956.

Papers related to Technology Center 2800 applications only may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30

(November 15, 1989). The Technology Center Fax Center number is (703) 872-9306.

  
James Vannucci